The Ballarat Naturalist

June 2002

Black Swan
(Cayley)

Lake Wendouree Swans

Speaker: John Gregurke

John is one of our members who has been assisting with research into aspects of Black Swan behaviour conducted by members of the Department of Zoology from Melbourne University. The Lake Wendouree swans are habituated to humans and readily accept food, enabling them to be caught. In 1999 Ken Kraaijeveld began post-graduate work, investigating brood parasitism in swans, and what factors lead to pairing and breeding success.

In order to identify birds, official CSIRO metal bands were used, together with plastic bands for field identification. Nest counting and mapping were done by Ken and John in the canoe, and some banding and cygnet identification was done at the nest, as well as onshore. The bulk of the nests are to be found in the reeds on the lake side of "Fairyland", with a few near the corner adjacent to Loreto Convent, and scattered ones in the reeds out in the middle.

Brood Parasitism: In 2000, 61 nests were located, of which 3 contained a Musk Duck egg. Musk Ducks do not remove eggs from the host nest, so swan survival rates are unaffected. The survival rates of the parasitic duckling are small: incubation times are very different, and female Musk Ducks directly feed their young, while swans provide no parental care other than protection to their young. Experiments elsewhere showed that swans are not particularly good at recognising foreign eggs and do not reject them; the ability of the egg to withstand the weight of the swan sitting on them is probably more significant to the parasite's survival.

Pairing and breeding success: All adult birds had tarsus, wing and bill measurements taken; the various types of feathers were counted and their colours recorded; the birds were weighed and blood samples taken. Cygnets had their foot webbing punched according to a code which enabled future identification—these birds were banded when they had grown large enough. Blood samples were taken for DNA testing to check parenting.

Analysis of physical attributes showed that the number of display feathers (the curly ones seen on the top of the wings when a swan fluffs up its plumage) was significant in determining breeding success. Experiments were carried out whereby some swans had display feathers partly cut off, others had extra display feathers added (by using Super Glue!) while a control group had the feathers cut, then replaced so that the manipulation was not a factor in the experiment. The number of display feathers is the same in both sexes, and paired birds had more of them, as did pairs having distinct territorial habits. Such pairs had more surviving cygnets regardless of the initial number of eggs. Did this territoriality result in an uninterrupted supply of good food? Were they more aggressive towards predators?

Folklore has it that swans mate for life. The Lake Wendouree studies showed that of 39 pairs in 1999, 60% remained with the same mate the following year; 30% had a different partner principally because of the death of the mate, while 10% did not breed. Extra-pair copulation was found to have occurred in 20%-30% of the clutches—usually one cygnet was not the offspring of the incubating father. Yes, the males often do the bulk of the incubating! And sometimes an extra male seems to hang around a nest and assist with the young. Birds cannot count - a family would be found with an extra cygnet, such adoptions being fairly common.

How many cygnets hatch on our lake? In 1999 29 clutches were found with 94 cygnets hatching (4 -7 cygnets seems to be the average number per clutch); in 2000, 318 eggs in 56 clutches produced 223 young, the first hatching in June, the last in December; in 2001, 87 eggs in 15 clutches produced 62 young. Natural predators include Water Rats and Swamp Harriers.

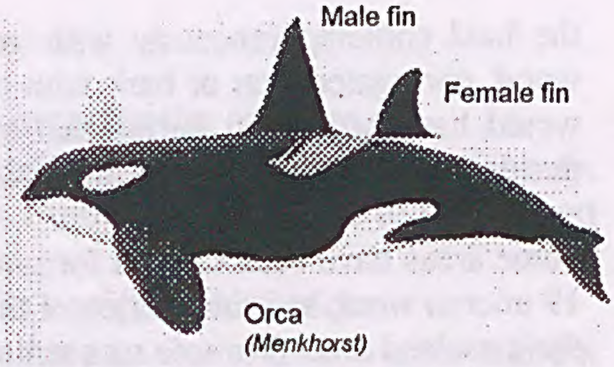
Why do the numbers vary so between seasons? It has been suggested that when water levels are high, it is difficult for the swans to reach down for food, but given the amount of grazing which takes place on the grass surrounding the lake, this seems questionable. Longer term studies would be required to discover what factors may be operating.

Killer Whales

Speaker: Frank Harrap

Using home video footage taken at the Vancouver Aquarium and on a whale-watching trip near Vancouver Island, Frank introduced us to the physical attributes of Orca, commenting on their size and appearance. These mammals are at the top of their food chain, and prey on a variety of creatures including penguins, porpoises, dugong, sea birds and the young of all other species of whales. In the ocean they occur in groups of

20-50, and may have some mechanism whereby mating is encouraged between individuals of different pods in order to maintain genetic diversity.



Orca
(Menkhorst)

Frank had recorded part of a lecture he attended where the sounds of the whales had been picked up by hydrophones—high pitched squeaks which enabled individual whales to recognise one another. The sounds produced by their sonar systems were also used to form a "net" of sound to herd fish in a co-operative feeding effort. One set of sounds was interpreted by the lecturer as a whale flinging its prey from side to side. (remember those vivid images of David Attenborough's footage in Patagonia where the killer whales lunged onto the beach and flung the baby seals into the air?)
Frank recorded part of the lecturer's slide show illustrating researchers in kayaks on the Alaskan fjords. The whales show considerable curiosity and surface to look around. They are in the habit of nudging ice floes till they tilt, and spill the seals into the water!

In the Alaska/British Columbia area the whales feed on Chinook salmon as the latter migrate to their spawning grounds. A whale can eat 350-400 lbs. of salmon a day. The video showed whales breaching, and Frank made a telling point by juxtaposing footage taken in the confines of the aquarium with the free-swimming creatures out in the open ocean.

Editor.

Excursion: "Narmbool"

Leader: Dick Patterson

Twenty members met Dick Patterson, Sovereign Hill's Education Officer, on the Midland Highway on a beautiful autumn day for a 4 km drive along Pryor's Road to the Narmbool woodland. The Narmbool property, 4000 acres, has been generously donated to Sovereign Hill for educational purposes. The open woodland of 500 acres was added in 1980. It has some magnificent old growth trees, as well as younger trees, which were mostly Narrow-leaf Peppermint, Messmate Stringybark, Scent-bark, Manna Gum, Cherry Ballart and Blackwood with an understorey of Bracken.

The path led to a camp-site which is being established for 40 campers. The educational program aims to recreate the pastoral conditions of the selectors who occupied the land contemporaneously with goldmining in the area. Huts are being built of wood, corrugated iron or bark with canvas roofs; each has four canvas beds such as would have been used during that era. Students will experience simple bush living during a three-day program which will involve history and environmental studies.

Some areas have been cleared for grazing. There are 20,000 Merino sheep producing 19 micron wool, and this section of the property is in the charge of a farm manager. In the grassland areas Tea-tree was scattered amongst the Kangaroo Grass and Cranberry Heath which was flowering prolifically - is this a sign of a bad winter?

A Copperhead snake was seen going under a log. It was flushed out for all to see, and was about a metre long.

We stopped for a drink overlooking a gully where salinity is a problem. Seven dams have been built in the last 15 years to counteract the problem and halt erosion, the dams slowing the flow of water. Along the way we saw rounded quartz pebbles indicating that there had once been a waterway. Also seen were stones of quartzite, formed by pressure or heat on sandstone millions of years ago.

With the sharp eyes of some members we saw a few flowers of the Parsons Bands orchid and the case of the Ghost Moth. Williamson's Creek runs through the property. In a depression leading to the creek we were shown tunnels created by water eroding clay under the topsoil. (Editor's note: Soils developed on the Ordovician sediments frequently display two main horizons - duplex soils - the lower one of which is highly dispersible in water, creating tunnels which later collapse to form gullies). Care had to be taken as there were holes leading to the tunnels.

We lunched in a hut reconstructed in the manner of an outstation with an adjacent kitchen, and used by students in their studies. There were old implements, skulls and bones of native creatures and a beautiful kangaroo skin on the wall. The education program for students from late primary to early secondary includes research in flora and fauna, geology, water quality and so forth, concluding with a review.

We completed a circuit and returned along an area of native plantings beside an eroded creek. A most interesting day , thanks to Dick. We can imagine how the students must enjoy their time and how fortunate they are to have this facility.

Ninety bird species have been recorded on the property; we saw or heard -

Grey Currawong
Superb Fairy-Wren
Magpie
Brown Thornbill
Crimson Rosella
Little Pied Cormorant
Striated Thornbill
Sulphur-crested Cockatoo
Grey Shrike Thrush
Fan-tail Cuckoo
White-throated Treecreeper
Masked Lapwing.

Helen Burgess

May Meeting Points

- 33 members and visitors were welcomed to the meeting.
- Permanent loan of Victorian Naturalist to Central Highlands Library: Library is interested in the volumes. Further details have to be worked out.
- Hats and Badges: Members asked to complete order form.
- Next month's excursion: Sunday 9 June to Ballarat Grammar School Environment Centre will include admission to exhibition of Celia Rosser Banksia paintings.
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Show and Tell.

- Carol Hall: Photographs of North Gardens Wetlands and Victorian Open Range Zoo at Werribee.
- Helen Burgess: Fungi from Ballarat North garden that are being eaten by possums.
- Kay Preston: Photograph of Amanita fungus seen at St George's Lake near Creswick.
- Lyndsay Fink: Pair of socks made in New Zealand form 60% wool and 40% possum fur.

Field Reports

- John Gregurke: At Lake Wendouree, 3 Pink-eared Duck near Convent Corner and Spotless Crake in pond north of Lake Lodge.
- Tony Johns: Echidna crossing highway near Hattah Kulkyne National Park. Dinner-plate sized tortoise caught while fishing in Murray River at Collignan.
- Greg Binns: Little Eagle harassed by Magpies at Winter Swamp.
- Lyndsay Fink: Large flock of 80+ Yellow-tailed Black Cockatoos at Meredith.
- Ken Hammond: Two male Flame Robins seen in Old Ballarat Cemetery.
- John Mildren: Brown Falcon causing consternation among birds at Mt Helen.
- Margaret Tonkin: Six goats along Lerderderg Gorge between Mt. Blackwood and O'Brien's Crossing.
- Dulcie Brooke: White-faced Heron guarding its territory along the north side of Lake Wendouree.
- Bob Curtain: Swans disrupting traffic in Gillies Street.
- Margaret Rotheram: Freckled Duck on Lake Lorne in Drysdale.
- Carol Hall: Singing Honeyeaters in the shrubs on The Bluff at Barwon Heads.

The Eastern Grey Squirrel *Sciurus carollnensis* in Victoria

J. H. Seebeck

The following is adapted from *The Victorian Naturalist* Vol. 101 No. 2 March/April 1984. It seemed appropriate to include this in the light of Bon Strange's death at Easter of this year, and the donation to the Club by Alison and Maurice Pilmore of a set of bound copies of *The Victorian Naturalist,* which are to be lent permanently to the Central Highlands Library.

The Eastern Grey Squirrel was first introduced to the United Kingdom from America in 1876. It is not known when it was introduced to Melbourne, but it was well established in the south-east suburbs of Melbourne by the early 20th century after the initial colony was started at "Rippon Lea". This population peaked at 120-130 individuals in the 1930s.

A colony was established in Ballarat in the 1930s. Late in 1937 Mr. T.C. Troop, curator of the Ballarat Botanical Gardens, arranged for a pair to be obtained from "Rippon Lea". The pair was handfed on maize and became tame. The colony expanded to around 100, spreading up to 1 Km away. The squirrels adapted to food from the Garden trees—acorns from the several varieties of oak trees, hawthorn berries, Irish Strawberry, walnuts, elm "hops", maple seeds, chestnuts and leftovers from visitors. Gardeners tending flower beds turned up caches of nuts.

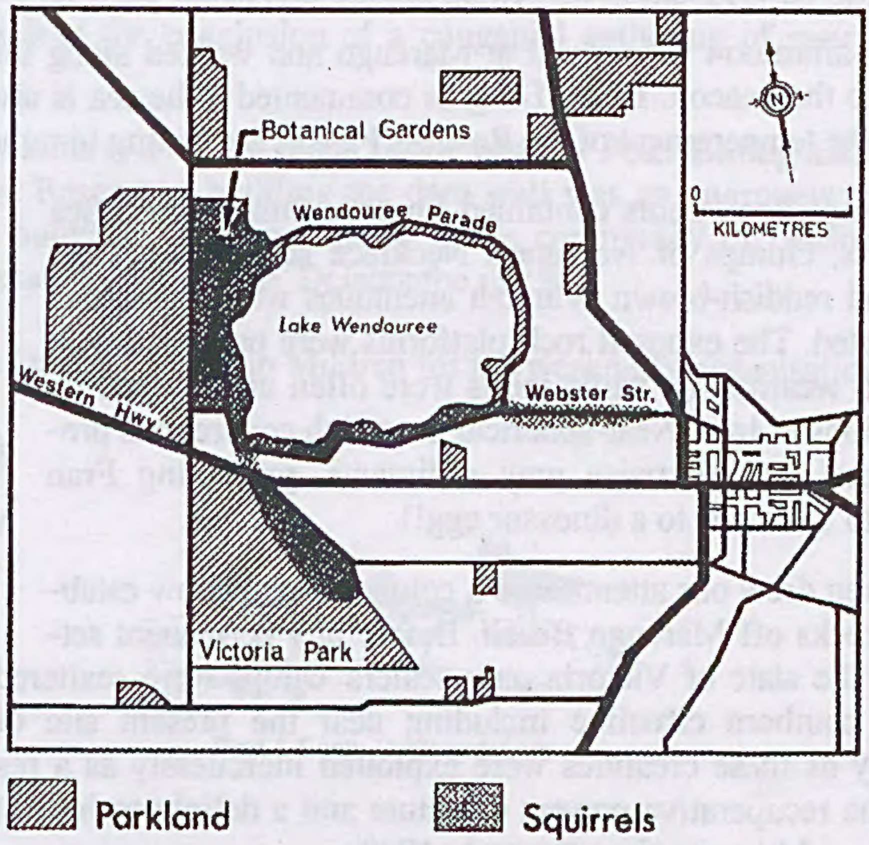
Some were captured and kept in captivity in the Ballarat Zoo which operated between 1917-1960. Streets such as Webster Street with old established gardens became a haven for the squirrels. As well as cats, predators included Ravens and small boys, and cars also claimed lives. During the early 1960s specimens were required for taxonomic determination and Bert and Bon Strange, and Ted and Stella Bedggood, members of the FNCB, attempted without success to live-trap them during 1963-5. They reported on squirrel distribution and activity and donated the road-killed specimens.

Numbers declined from the late 1950s mainly due to predation by cats and competition from Brushtail Possums for food and nest sites. Possums took large numbers of unripe acorns, depriving the squirrels of their prime food source. In 1968 some squirrels were trapped and used in a TV commercial for chocolate. Some of these were kept in captivity, including at Melbourne Zoo, but did not breed.

Jack Wheeler considered that the population was facing extinction in 1969, and the last recorded observation was early in 1973, just north of Lake Wendouree.

Acknowledgements by Seebeck include: a photo taken by Trevor Pescott of a captive hand-reared specimen in Ballarat around 1960; residents of Webster Street who made comments including G. Taylor and S. Patterson; P. Menkhorst for helping with the manuscript.

Reference is made to Jack Wheeler's articles in *The Courier* of 29/2/64, 16/3/68, 17/5/69, 7/4/73.



Distribution of the Eastern Grey Squirrel in Ballarat, 1937-1973.

Apollo Bay Camp-out 10-12 May 2002

At roll call on Friday evening at the Star of the Sea Convent, our home for the next two nights, 14 members paraded, determined to make our third consecutive sojourn at this address a memorable one.

On Saturday morning we headed east to Kennett River then inland to the Grey River Reserve - we followed the track to the lookout and from this platform gazed out along a valley, the view obscured by recent growth. The track twisted through thick, wet rainforest, the tree trunks covered with mosses, liverworts and fungi. A few of us discovered leeches as we brushed against the dripping leaves. Elaine Gregurke, having recollections of the Bush Tucker Man's (Les Hiddins) stories of survival in the bush, serenely plucked berries of the native prickly currant bush to sate our appetite - a bland taste.

Continuing on we stopped at the Sabine Picnic area in Sunnyside Road for lunch, then passed through the Otway State Forest before rejoining the Great Ocean Road at Wongarra. Ken and Del McDonnell had joined us for the day as we then stopped and walked along a beach with rocky outcrops to the east of Brown's Creek. Sooty Oystercatchers - distinctive birds - flew past us to a new site in the intertidal zone. We had taken note of the timing of low tide - late afternoon - and planned the day accordingly.

About mid-afternoon we arrived at Marengo and walked along the sandy and rocky foreshore to the beacon. Helen Burgess commented "The sea is always moving". Immediately the temperament of the Restless Flycatcher sprang to mind.

(Editor's note: Rock pools contained limpets, Small Green Sea Stars, snails, clumps of Neptune's Necklace seaweed and the small round reddish-brown Waratah anemones whose tentacles were retracted. The exposed rock platforms were patterned with honeycomb weathering, while joints were often emphasised by concentrations of iron. Near-spherical iron-rich concretions protruded above the otherwise grey sediments, prompting Fran Hanrahan to liken one to a dinosaur egg!)

Common Surf Barnacle

John Mildren drew our attention to a colony of seals now established on rocks off Marengo Beach. Before any permanent settlement in the state of Victoria only sealers' camps were scattered along the southern coastline including near the present site of Apollo Bay as these creatures were exploited mercilessly as a resource. What testimony to the recuperative powers of nature and a delight to have this seal colony off Marengo since the early 1990s.

This time heading east of the point at Marengo much kelp littered the beach; I wondered has this organism ever been given the sobriquet "cat o' nine tails" - a strong resemblance to this instrument of days gone by formed in my mind. John let us know that kelp is harvested on King Island commercially. Further enquiries revealed that the factory on this island is used to process this resource which is subsequently used in the manufacture of ice-cream and also puts the bubbles in beer as part of the processing of the product.

On Saturday evening keen astronomer Bob Curtain entertained us with a show of slides of features of the night sky as photographed through the 3.9m telescope of the Anglo-Australian Observatory at Siding Spring, NSW. What worlds exist beyond our vision!

Next day, Sunday, heralded a change in the weather with strong winds buffeting our lodgings and rain threatened as the sky looked dark and grey. The wind subsided and the rain held off as we headed west along the Great Ocean Road to the Beech Forest turn-off. Along here John

Bull Kelp

Gregurke pointed out Rough and Soft Tree Ferns, the red berries of Mountain Pepper, the green and yellow flowers of Mountain Correa and showed us strips of bark of a species known as Bushman's Bootlace.

We had a cup of tea at Mait's Rest; some members chose to walk the circuit through fern gullies and stands of Myrtle Beech. As the weather deteriorated we headed back to our quarters for an early lunch and bought some fish at the local co-op. In the afternoon we dispersed at the conclusion of a congenial gathering of members from all walks of life.

On the return to Ballarat during a break in the weather Peter Billing and I called in at the West Barwon Reservoir: building the dam wall was an enormous undertaking. I recall the air of buoyancy and confidence in the community of Geelong when this structure was opened by Sir Rohan Delacombe in 1965.

Thanks to Claire Dalman and John Mildren for the weekend's organisation.

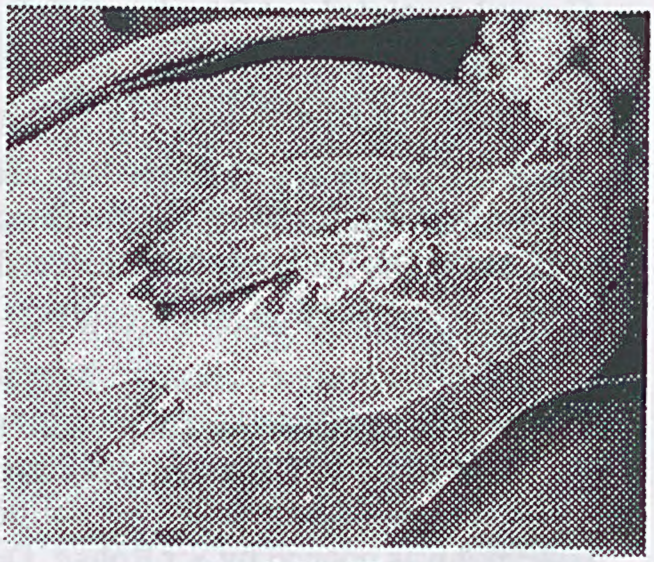
Tony Johns.

Pied & Sooty Oystercatchers

Securing the Future

To overcome adverse seasons animals adopt various strategies, such as hibernation, migration or food storage. These strategies may also facilitate the nutrition of young. Whilst not necessarily avoiding adverse seasons, some animals supply nutrient packages, such as eggs, that allow embryonic development. Many insects secure nutrients for the hatchlings by depositing eggs in suitable media, be it dung, carcasses or living bodies. Several wasps deposit their eggs in anaesthetized bodies which have been stored, for example, the mud wasps use purpose-built brood chambers containing carcass and egg, others use tunnels or crevices.

This autumn we had a large insect, about 35 mm long, frequenting a sector in our garden, and drinking at the bird bath. The creature was most probably a spider wasp, family *Pompilidae*, genus *Hemipepsis,* a long-legged ginger coloured insect with a banded abdomen and which carried its wings flat above the back.



Spider Wasp
Hemipepsis sp.
(Zborowski & Storey)

The spider wasp was frequently in the vicinity of a drystone wall which retains a bank above the lily-pond. One day our attention was drawn to activity beneath a gazania at the foot of the same bank, but some distance away. Binoculars revealed the spider wasp dragging a still-kicking Huntsman Spider. The wasp held the spider with its mouth parts and palps pulling backward.

The convoy proceeded to the drystone wall but not directly. There were a couple of excursions up the bank with the wasp occasionally tucking the prey out of sight by a stone or beneath vegetation. The wasp would then scurry about as though seeking landmarks.

At the penultimate stop the wasp took to the air and reconnoitered over an area of about 3 square metres. The prey was again seized and dragged across to the drystone wall and tugged up the wall, the wasp still travelling in reverse. The prey was again hidden and the wasp buzzed around the wall until it found its destination, a tunnel between two vertically adjacent stones. It returned to the prey and dragged it to the tunnel and both disappeared.

No doubt the anaesthetized spider became injected with an egg, the larva from which will devour the spider.

The total distance the wasp dragged the spider was about 20 metres. This is just over 271 times the length of the wasp; in human terms a 1.7m human would have to drag its prey 971m—nearly a kilometre—to compare. The vertical height through which the wasp lifted the spider, as it dragged it up the bank, was 900 mm, 25.7 times its body length. To compare, a 1.7m human would lift its prey through 43.7m. It is quite probable that the spider's weight was the same as, or greater than, the wasp's.

It makes you think!

Ken and Del McDonnell.

A splendid book available from the Ballarat Public Library called *Okavango: Africa's Wetland Wilderness* by Adrian Bailey, published in 1998 by Struik Publishing Group, Cape Town (Dewey 508.6883) makes a great follow-up to Andy van Smeerdijk's talk in April.

The author spent 10 months there during 1996/7, mostly in a tent in wilderness areas and in the Moremi Game Reserve. The area is so vast that at one stage he saw only one other vehicle in a month. The book begins with the geological origins of the Delta and the physical environment, continues with the creatures and their interactions, and finishes with the threats facing the region. Detailed comments on the ecological relationships of the zone make this book far more than a coffee table picture book.

Notwithstanding that last comment, the photographs are superb; often aerial shots are the best way to capture the vastness of the Delta. Close-ups, backlit shots and the blur of herds in motion contribute to an impression of an unspoilt oasis well worth a visit.

Editor.

The Privacy Act

This act now governs what information may be collected and kept by groups and organisations and how that information can be used. We are required for Incorporation and insurance purposes to keep a register of members' names, addresses and phone numbers. However we do not pass this list on to other individuals or organisations.

Stop Press !

Discovering Ballarat's Bushland

is now with the printer.

Calendar

June

Fri. 7	Meeting: *Fauna Survey Methods* with Raymond Gibson.	
Sun. 9	Excursion: Ballarat Grammar Environmental Centre with Phil Morrison. Celia Rosser Exhibition. **NB.** 2 pm at Gate D, Forest St.	
Tues. 25	Committee Meeting @ Greg Binns',	7.30 pm.

July

Fri. 5	Meeting: Volunteers for Rare Plant Monitoring - Andy Arnold.
Sun. 7	Excursion: Significant Trees around Ballarat - Pat & Bill Murphy.

Supper Duty

June: Maureen Christie & Joan Andrews

Committee

President	Mrs. Carol Hall
Vice-President	Mr. Greg Binns
Secretary	Mr. John Gregurke
Treasurer	Mr. Bob Curtain

Miss Helen Burgess..........
Miss Maureen Christie........
Mrs. Claire Dalman..........
Mrs. Carol Hall (Editor).....

Mr. Les Hanrahan.............
Mr. John Mildren.............
Mrs. Kay Preston.............

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Website: www.ballarat.yourguide.com.au Click on *Local Info.* Search *Environment.*

Meetings are held at the Ballarat Horticulture Centre, cnr. Gregory & Gillies Sts (VicRoads 254 F8) on the first Friday of the month at 7.30pm.

Excursions: Depart from Creswick Plaza, Creswick Rd., Ballarat (VicRoads 255 M10) at 9.30 am unless otherwise specified.

A monthly publication of the Field Naturalists' Club of Ballarat Inc.
Incorporation # A0014919P